State of California Business, Transportation and Housing Agency

Memorandum

To: SEE ATTACHED Date: April 13, 1998

File:

From: DEPARTMENT OF TRANSPORTATION
Traffic Operations
Mail Station 36

Subject: Yellow Change Interval

This memorandum is being issued to supersede the June 12, 1997 memorandum on Revision to Chapter 9 of the Traffic Manual. After consultation with the Traffic Signal Committee, it was agreed upon that Section 9-04.5, "Yellow Change Intervals," in the Metric version of the Traffic Manual shall read as follows:

9-04.5 Yellow Change Intervals

The purpose of the yellow signal indication is to warn traffic approaching the signal that the related green movement is ending or that a red indication will be exhibited immediately thereafter and traffic will be required to stop when the red signal is exhibited.

The length of the yellow change interval is dependent upon the speed of approaching traffic. Suggested yellow change intervals are shown below:

Approach Speed		Yellow
(mph)	(km/h)	(seconds)
25 or less	40	3.0
30	48	3.2
35	56	3.6
40	64	3.9
45	72	4.3
50	80	4.7
55	89	5.0
60	97	5.4
65	105	5.8

A revised Section 9-04.5 will be sent to all registered holders of the Traffic Manual by the California Department of Transportation Publication Distribution Unit. If you have any questions, please call Mr. Sam Ehsan at (916) 654-5039 or Calnet 464-5039.

SOMPOL CHATUSRIPITAK, Chief
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Development and Support

Table 9-1
SUGGESTED DETECTOR SETBACKS FROM LIMITLINE

Deceleration Rate d = 3.05 m per second^2

Deceleration Time = V/d

Deceleration Distance = $\frac{1}{2}dt^2$ or $\frac{1}{2}Vt$ or $\frac{V^2}{2d}$

Reaction Time r = 1.00 second

Reaction Distance = Vr

Total Time = Deceleration Time + Reaction Time = t + r or $\frac{V}{d} + r$

Detector Setback = Decerlation Distance + Reaction Distance

$$= \frac{V^2}{2d} + Vr$$

Yellow Interval T = $r + \frac{V}{2d}$

V = Speed (meter per second)

d = Deceleration Rate (meter per second^2)

t = Deceleration Time (seconds)

T = Yellow Interval (seconds)

SPEED			DEC. TIME	DEC. DIST.	TOTAL TIME	DETECTOR SETBACKS	
						ACTUAL	SUGGESTED
mph	km/h	m/s	Seconds	Meters	Seconds	Meters	Meters
25	40	11.18	3.67	20.49	4.67	31.67	30
30	48	13.42	4.40	29.51	5.40	42.93	45
35	56	15.65	5.13	40.17	6.13	55.82	55
40	64	17.89	5.87	52.46	6.87	70.35	70
45	72	20.13	6.60	66.40	7.60	86.52	85
50	80	22.36	7.33	81.97	8.33	104.33	105
55	89	24.60	8.06	99.18	9.06	123.78	125
60	97	26.83	8.80	118.04	9.80	144.87	145
65	105	29.07	9.53	138.53	10.53	167.60	170
70	113	31.29	10.27	160.50	11.27	191.79	190